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INCH-POUND

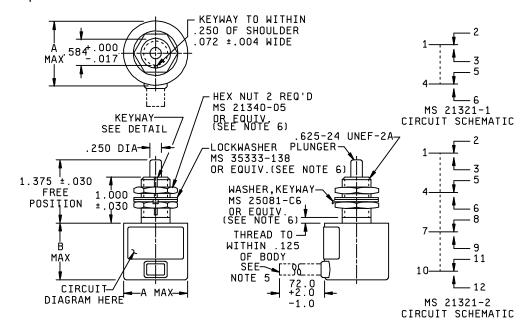
MIL-PRF-8805/39F 3 September 1999 SUPERSEDING MIL-S-8805/39E 3 December 1990

PERFORMANCE SPECIFICATION SHEET

SWITCHES, SENSITIVE, LIMIT, PLUNGER, 7 AMPERES, RESILIENT SEAL, FLUID RESISTANT

This specification forms a part of MIL-PRF-8805, dated 23 January 1998, and is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification and MIL-PRF-8805.



NOTES:

	Inches	mm	Inches	mm
1. Dimensions are in inches.	.003	0.08	.250	6.35
2. Metric equivalents are given for general information only.	.004	0.10	.584	14.83
3. Unless otherwise stated, tolerance is $\pm .010$ (0.25 mm).	.030	0.76	.625	15.88
4. Contour optional, provided maximum dimensions specified	.038	0.97	1.000	25.40
are not exceeded.	.072	1.83	1.375	34.93
5. Leads shall be marked with the switch circuit identification	.125	3.18	2.0	50.
number followed by wire gauge number (1-20, 2-20, etc.).			72.0	1828.

6. Alternative base metals and protective finishes, as approved by the qualifying activity, may be utilized for hexagon nut, lock washer and keyway washer material. Dimensions shall be in accordance with the referenced hardware specifications.

FIGURE 1. Dimensions and configurations.

MIL-PRF-8805/39F

REQUIREMENTS:

Dimensions and configurations: See figure 1 and table I.

Enclosure design: 4 (resilient). All entrances to the switch cavity except through the actuator bushing shall be sealed by fusion of glass-to-metal, metal-to-metal, or ceramic-to-metal and the lead wires shall be potted to provide stress relief.

Temperature characteristic: 1 (-55°C to +85°C).

Shock type: M (100 g's).

Sinusoidal vibration grade: 2 (10 to 2,000 Hz).

Finish: Switch housing shall be processed to resist corrosion.

Maximum weight:

MS21321-1: .45 pound. MS21321-2: .80 pound.

Operating characteristics: ±20 percent variation from specified values acceptable after test.

Actuating force: 9 ±3 pounds.

Overtravel force: 30 pounds maximum. Release force: 4 pounds minimum.

Pretravel: .040 inch (1.01 mm) maximum.

Movement differential: .020 inch (0.50 mm) maximum.

Overtravel: .250 inch (6.35 mm) minimum.

Coincidence of operating and releasing points: All poles shall transfer within .010 inch (0.25 mm) of

plunger travel.

Strength of actuating means: 35 pounds.

Contact resistance: Not applicable. Insulation resistance: 100 megohms.

Terminal strength: 5 pounds.

Dielectric withstanding voltage:

At atmospheric pressure: 1,000 V rms.

At reduced barometric pressure: 50,000 feet; 400 V rms.

Mechanical endurance: 25,000 cycles. Electrical endurance: 25,000 cycles.

Electrical ratings: See table II.

MIL-PRF-8805/39F

Fluid resistance: Except for the cut end of the lead wire, switches shall be submerged in each of the following fluids for 2 minutes to 2 minutes 30 seconds, which shall consist of one cycle (one cycle is 10 minutes to 12 minutes 30 seconds total). Each switch shall be subjected to three cycles.

- a. Turbine fuel (MIL-DTL-5624).
- b. Hydraulic fluid (SAE AS1241A).
- c. Coolanol 1/ (MIL-PRF-87252).
- d. Ethylene glycol (ASTM-E-1119-92).
- e. Lubricating oil (MIL-PRF-7808).

After each immersion, the excess fluid shall be blown off the external surfaces of the switch with an air jet. Following the third cycle, the switch shall be subjected to and shall meet the requirements for dielectric withstanding voltage, insulation resistance, operating characteristics, seal tests, and marking visibility.

Marking: The circuit schematic shall be marked on the switch case.

PIN: See table I.

Qualification inspection:

Group submission: See table III.

Group A inspection:

Seal test: Only watertight test shall be performed.

TABLE I. Part or Identifying Number (PIN) and characteristics.

PIN	A diameter maximum	B maximum	Lead wires, number required
MS21321-1	.720 (18.29)	.980 (24.89)	6
MS21321-2	1.031 (26.19)	1.200 (30.48)	12

TABLE II. Electrical ratings.

Load	Sea level 28 V dc	50,000 feet 28 V dc	
	(Amperes)	(Amperes)	
Resistive	7	7	
Inductive	4	2.5	
Motor	4	4 <u>1</u> /	

1/ Application information only.

^{1/} Monsanto Company registered trademark.

MIL-PRF-8805/39F

TABLE III. Qualification inspection (group submission).

Examination or test	Samples	Extent of Approval	
Qualification inspection table of MIL-PRF-8805	MS21321-2 (24 units)	A.II	
Visual and mechanical examination Operating characteristics	MS21321-1 (2 units)	All	

Custodians:

Air Force - 11

Army - CR DLA - CC

Navy - EC

Preparing activity: DLA - CC

(Project 5930-1691-16)

Review activities:

Air Force - 19, 99

Army - AR, AV, MI

Navy - AS, MC, OS, SH